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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/821,539	03/28/2001	Tsuyoshi Tanaka		4713

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EXAMINER

STAHL, MICHAEL J

ART UNIT PAPER NUMBER

2874

DATE MAILED: 12/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/821,539

Applicant(s)

TANAKA ET AL.

Examiner

Mike Stahl

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2,3 and 6-13 is/are allowed.
- 6) ☒ Claim(s) 1,4 and 5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

This office action is in response to the amendment filed October 3, 2003. The changes to the claims have been entered. Claims 1-13 are pending.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Nagata et al. (US 5727105).

Nagata discloses a module (see figs. 11-13) including an optical device **21**; an optical fiber **76a** an end portion **81a** of which is optical coupled to the optical device; a package **63** containing the optical device and the fiber; and an insertion tube **75a** fixed through the wall **73a** of the package, the fiber extending out of the package through the tube. The end portion **81a** is offset with respect to a fixed portion of the fiber sealed within tube **75a** to provide a bend in the fiber. The arrangement is independent of orientation, so that in some orientations the fixed portion will be “below” the end portion depending on a viewer’s perspective. The axis of the fixed portion is parallel to the axis of the end portion, at least for the parts of the end portion which are sealed within protector **82a** or sleeve **74a**. Thus the Nagata module meets all the limitations of claim 1.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagata et al. (cited above).

Nagata does not specify that the module includes a thermoelectric cooling element, or that the optical device **21** is a semiconductor laser. Nagata is concerned with providing hermetic sealing of optical fibers coupled to an optical element, and teaches packages which are useful for optical devices which include an electrooptical element having an optical waveguide (col. 1 lines 10-20). Thus it would be clear to a skilled person that the Nagata package would be applicable to a variety of such optical devices. A semiconductor laser is an electrooptical element having an optical waveguide. It would have been obvious to a person having ordinary skill in the art to use the Nagata package with a semiconductor laser since the package provides an effective hermetic seal against contaminants which are known to degrade the operation of semiconductor lasers (e.g. moisture, organic compound vapors, and so forth). It would further have been obvious to a skilled person to incorporate a thermoelectric cooler into the package in order to regulate the temperature of the enclosed optical device **21** since it is well known that many optical devices have temperature-dependent operation. The use of thermoelectric coolers is old in the art (see e.g. figs. 5 and 7 of the present disclosure). In the case of a semiconductor laser specifically, it is known that the lasing wavelength tends to drift with temperature changes, and

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such drifting could be undesirable when the laser is used in a communications application.

Alternatively, the thermoelectric cooler could be used to tune the lasing wavelength of an enclosed laser or the reflection wavelength of an enclosed waveguide grating.

Response to Arguments

Applicant's remarks regarding the previous rejection of claim 1 under Nagata et al. have been considered but they are not persuasive. At p. 8 of the response, applicant argues that in Nagata it is not the end portion of the optical fiber which is coupled to the optical device, but rather that "the end portions of the fiber 76a and 76b are introduced into the connecting passage 68 through the optical fiber-fixing means 75a and 75b." Applicant also comments that 81a and 81b represent fiber sections within the main chamber 66. It appears that applicant regards elements **76a** and **76b** as being opposite end portions of a single contiguous fiber. The examiner disagrees and refers applicant to the same portions of Nagata cited in the remarks, i.e. col. 10 lines 28-34 which refer to optical *fibers* **76a** and **76b**, and lines 43-49 which refer to fiber sections **81a** and **81b** connected at *terminal faces* thereof to terminal faces of the optical element (emphasis added). It is clear that there are two distinct fibers, **76a** or **76b**, and that each fiber has a respective end portion **81a** or **81b** coupled to optical element **21**, and an opposite respective end portion which is accommodated by a respective fiber-fixing means **75a** or **75b**. Accordingly the rejection under Nagata set forth in the last office action has been maintained in this action.

Allowable Subject Matter

Claims 2, 3, and 6-13 are allowed. In the last action, claims 2 and 3 were declared to have allowable subject matter but were objected to because they depended from rejected parent claim 1. Claims 2 and 3 are now allowable since applicant rewrote them in independent form. Claims 6-13 are allowable by respective dependence from claims 2 or 3.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

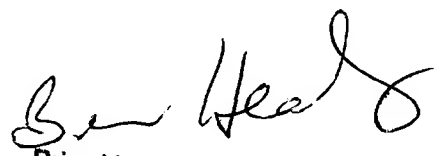
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Any inquiry concerning this communication should be directed to Mike Stahl at (703) 305-1520 prior to January 12, 2004 or (571) 272-2360 after that date. Official communications which are eligible for submission by facsimile and which pertain to this application may be faxed to (703) 872-9306. Inquiries of a general or clerical nature (e.g., a request for a missing form or paper, etc.) should be directed to the Technology Center 2800 receptionist at (703) 308-0956 or to the technical support staff supervisor at (703) 308-3072.

MJS

Michael J. Stahl
Patent Examiner
Art Unit 2874

December 22, 2003


Brian Healy
Primary Examiner